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ATTORNEYS AT LAW

Eckert Seamans Cherin & Mellott, LLC
919 East Main Street, Suite 1300
Richmond, VA 23219

TEL: 804 788 7740
FAX: 804 698 2950

230910143

Cody T. Murphey
cmurphey@eckertseamans.com
804.788.7765

September 7, 2023

VIA ELECTRONIC FILING

Mr. Bernard J. Logan, Clerk
Virginia State Corporation Commission
Document Control Center
Post Office Box 2118
Richmond, Virginia 23218

Re: *Commonwealth of Virginia, ex. Rel. State Corporation Commission*
In re: Virginia Electric and Power Company's Integrated Resource Plan filing
pursuant to Virginia Code § 56-597 et seq.
Case No. PUR-2023-00066

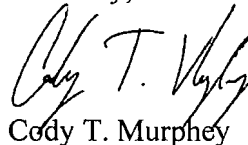
Dear Mr. Logan:

On August 8, 2023, the Data Center Coalition ("DCC") filed the Direct Testimony of Josh Levi. After further review, DCC determined that certain revisions to Mr. Levi's Direct Testimony are necessary. Specifically, DCC has corrected the estimated number of additional jobs supported by the data center industry in Virginia and the associated footnote on pages 7-8 of Mr. Levi's Direct Testimony.

Accordingly, please find enclosed for filing in the above-referenced proceeding the corrected Direct Testimony of Josh Levi in both clean and redline versions. DCC intends to move for the admission of Mr. Levi's Direct Testimony, as corrected, into the record at the September 19, 2023, evidentiary hearing.

Thank you for your kind assistance in filing this document in the appropriate manner, and please do not hesitate to contact me should you have any questions or need anything further.

Sincerely,



Cody T. Murphey

Enclosures

cc: Vishwa B. Link, Esq.
Paul E. Pfeffer, Esq.
Mary Lynne Grigg, Esq.
William H. Chambliss, Esq.
Arlen K. Bolstad, Esq.
C. Meade Browder, Jr., Esq.

ECKERT

J. E. A. M. A. S. S.

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Mr. Bernard J. Logan, Clerk
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230910143

Nate Benforado, Esq.
Evan Dimond Johns, Esq.
Dorothy E. Jaffe, Esq.
William T. Reisinger, Esq.
S. Perry Coburn, Esq.
Brian R. Greene, Esq.
Mark W. DeLaquil, Esq.
Sheila Weimer, Esq.
Jasdeep S. Khaira, Esq.

Redline

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

COMMONWEALTH OF VIRGINIA, <i>ex rel.</i>)	
)	
STATE CORPORATION COMMISSION)	
)	Case No. PUR-2023-00066
In re: Virginia Electric and Power Company's)	
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Virginia Code § 56-597 <i>et seq.</i>)	

DIRECT TESTIMONY OF

JOSH LEVI

Eric M. Page (VSB 18103)
Cody T. Murphey (VSB 89437)
Eckert Semans Cherin & Mellott, LLC
919 East Main Street, Suite 1300
Richmond, Virginia 23219
Telephone: (804) 788-7771 (EMP)
Telephone: (804) 788-7765 (CTM)
Facsimile: (804) 698-2950
Email: epage@eckertseamans.com
Email: cmurphey@eckertseamans.com

Counsel for the Data Center Coalition

Filed August 8, 2023

Summary of the Direct Testimony of Josh Levi

1. I am the President of the Data Center Coalition ("DCC"), a coalition that represents and advances the interests of the data center community and advocates for a business climate, policies, and investments that support the growth and success of this essential technology business sector.
2. Virginia Electric and Power Company's ("Dominion's") Report of its 2023 Integrated Resource Plan (the "2023 IRP") points to energy demand from the data center industry as a "key driver" of overall energy and peak demand in Dominion's service territory.
3. My testimony points out that as an industry, it is important to make clear what data center energy use represents, how the data center industry has led the way in energy efficiency and greening the grid, and the significant economic benefits the industry has delivered to Virginia.
4. Data centers are not the only industry that will benefit from new Dominion grid investments. The Commonwealth of Virginia is diligently working to attract a number of new industries, many of which will require such upgrades and investments.
5. Data centers have a major role in aggregating essential computing capacity, maximizing energy efficiency in powering that data storage and processing, and then leveraging the aggregated load to develop and expand access to clean energy for data centers and other ratepayers.

DIRECT TESTIMONY OF

JOSH LEVI

1 **Q. PLEASE STATE YOUR FULL NAME.**

2 **A.**Josh Levi.

3 **Q. BY WHOM ARE YOU EMPLOYED?**

4 **A.**I have been the President of the Data Center Coalition ("DCC") since 2019.

5 **Q. WHAT IS YOUR EDUCATIONAL AND EMPLOYMENT BACKGROUND?**

6 **A.**I was awarded a bachelor's degree in political science from Virginia Tech, graduated cum
7 laude from the University of Richmond School of Law, and I am a member of the Virginia
8 State Bar. Prior to assuming my current role with DCC, I was Vice President for policy at
9 the Northern Virginia Technology Council ("NVTC"), a nationally recognized regional
10 trade association, where I spent nearly twenty years supporting Northern Virginia's vibrant
11 technology community. As the policy voice of the organization, I led state, federal and
12 local government relations, policy development and advocacy initiatives. As a member of
13 NVTC's senior leadership team, I provided strategic guidance and counsel related to all
14 facets of the organization's mission, goals and strategy. I initiated the launch and
15 development of NVTC's Data Center and Cloud Committee in 2010 and NVTC's
16 Sustainable Energy Committee in 2018 to help drive growth and advocate on behalf of
17 these two important sectors. I also oversaw NVTC's collaboration with Mangum
18 Economics to produce several research reports capturing and highlighting the economic
19 impact of Virginia's data center sector. I have served on numerous policy-related
20 committees and commissions. In 2018, I was appointed by Virginia Governor Ralph

1 Northam to serve as a member of the Virginia Data Sharing and Analytics Advisory
2 Committee, a position to which I was reappointed in 2019. Through all of my work, I am
3 widely recognized for my technology business policy leadership and expertise in key areas
4 across the technology ecosystem.

5 **Q. ON WHOSE BEHALF ARE YOU SUBMITTING TESTIMONY TODAY?**

6 **A.** I am testifying today on behalf of DCC.

7 **Q. PLEASE TELL US ABOUT THE DATA CENTER COALITION.**

8 **A.** DCC represents and advances the interests of the data center community and advocates for
9 a business climate, policies, and investments that support the growth and success of this
10 essential technology business sector. DCC is headquartered in Virginia, home to the
11 world's largest data center market, and its members maintain data center infrastructure and
12 investment across the globe. As President, I lead the organization and execute all aspects.

13 **Q. WHAT DOCUMENTS DID YOU REVIEW IN ORDER TO PREPARE YOUR**
14 **TESTIMONY?**

15 **A.** I reviewed Virginia Electric and Power Company's ("Dominion's") Report of its 2023
16 Integrated Resource Plan (the "2023 IRP") filed in this proceeding on May 1, 2023. I also
17 reviewed a number of Dominion's responses to discovery requests propounded by Staff
18 and the parties in this proceeding.

19 **Q. WHAT IS DCC'S INTEREST IN THIS PROCEEDING?**

20 **A.** The central focus of integrated resource planning ("IRP") is to ensure that a utility (which
21 has the obligation to serve) is fully engaged in developing the generation and delivery
22 resources essential to meet the electricity needs of its customers. Data center operations
23 generally use power at a relatively steady, around-the-clock basis. As discussed below, the

1 data center industry provides significant economic benefits to the Commonwealth and is
2 poised for further growth. Thus, DCC has a compelling interest to ensure that Dominion's
3 bulk power system can provide a reliable and affordable supply of electricity essential to
4 retain, grow, and support the substantial investments by DCC members in the
5 Commonwealth.

6 **Q. WHAT CAN THE COMMISSION DO TO ENSURE THAT DATA CENTER**
7 **INDUSTRY CAN CONTINUE TO GROW AND THRIVE IN THE**
8 **COMMONWEALTH?**

9 **A.** The Commission has an important role in ensuring that Dominion currently has and is
10 planning to deploy the resources necessary to meet the projected growth in its service
11 territory, including known and reasonably projected data center load growth. The
12 Commission can support this outcome by ensuring that Dominion's future resource plans
13 are prudent, reasonable and consistent with its obligation to serve.

14 **Q. DOMINION OBSERVES ON PAGE 6 OF ITS 2023 IRP THAT "RISING ENERGY**
15 **AND PEAK GROWTH FROM DATA CENTERS IN VIRGINIA IS A KEY**
16 **DRIVER OF PJM'S DOM ZONE FORECAST IN OVERALL ENERGY AND**
17 **PEAK DEMAND." ARE DATA CENTERS UNIQUE IN THIS REGARD?**

18 **A.** Virginia has been very successful in its efforts to encourage a growing data center market
19 in key regions of the Commonwealth. However, Virginia also is targeting other key drivers
20 of the 21st century economy in its economic development efforts, including advanced
21 manufacturing, electric vehicle manufacturing, battery storage, aerospace, and controlled
22 environment agriculture, among others. Virginia's continuing success in recruiting key
23 opportunities in these industries will also rely on the Commonwealth's ability to ensure the

1 availability of reliable and affordable electricity. As Virginia's success in growing
2 investment in these sectors advances, other industries may also emerge that will be key
3 drivers of overall energy and peak demand in Virginia.

4 **Q. PLEASE COMMENT ON THE IMPACT THAT DATA CENTERS HAVE ON OUR**
5 **EVERYDAY LIVES.**

6 **A.** Data centers are the lifeline for our increasingly digitized world. Everyone uses data –
7 from individuals, governments, small businesses to the largest of companies – and we rely
8 on data centers to store, process, generate, and distribute large amounts of information
9 securely. Data centers are also responsible for data backup and recovery, as well as
10 networking. Much of what we do in our daily digitized lives would not be possible were
11 it not for data centers. Our finances, communications, health care, recreation,
12 entertainment, education, transportation, work, and social lives are increasingly online, in
13 the cloud, with information needed to be stored and available on a personalized level in
14 real time. Data centers enable secure and efficient financial transactions involving vast
15 amounts of sensitive data, including customer account information and transaction data.
16 Healthcare centers leverage data centers to streamline how they manage and store data
17 from confidential medical records to prescriptions and anything in-between. Governments
18 use data centers to support their first responders and public safety agencies in conveying
19 data quickly and storing it safely in the cloud. Without data centers, there would likely be
20 no personalized shopping recommendations; on-the-fly driving directions; online
21 assistance in selecting a restaurant, hotel, or airline flight; digital grocery coupons; machine
22 responses to banking and billing inquiries; and so much more that we have come to expect

as basic parts of our everyday lives. The need for reliable data centers will continue to increase as society's reliance on digitized information and artificial intelligence increases.

Q. WHAT IS THE ROLE OF RELIABLE ELECTRICITY FOR THESE INDUSTRIES?

A. Reliable electricity will be essential in supporting the growth of our digitized world. That includes supporting the growth of all industries, governments, and individuals that directly or indirectly rely on data centers to safely and efficiently store and provide data on a 24/7 basis.

Q. HAS THE DATA CENTER INDUSTRY DELIVERED SIGNIFICANT ECONOMIC BENEFITS TO THE COMMONWEALTH?

A. Yes. In 2021, data centers represented \$6.8 billion of investment in Virginia – nearly two-thirds of all capital investment in the Commonwealth.¹

Q. WHAT ARE SOME OF THE WAYS IN WHICH DATA CENTERS DRIVE ECONOMIC BENEFITS TO THE COMMONWEALTH?

A. In 2021 in Virginia, the data center industry was directly and indirectly responsible for:

- 45,460 jobs
- 4.1 additional jobs for every data center job
- \$3.6 billion associated pay and benefits
- \$15.3 billion total economic output (direct and indirect)²

¹ Northern Virginia Technology Council, *The Impact of Data Centers on the State and Local Economies of Virginia* at 6 (March 2022), <https://dcmag.fr/wp-content/uploads/2022/04/2022-NVTC-Data-Center-Report-3.24.pdf> [hereinafter *2022 Virginia Data Center Report*].

² *Id.* at 5.

1 **Q. ARE DATA CENTERS DIRECT DRIVERS OF TAX REVENUES IN VIRGINIA?**

2 **A.** Yes. Data centers support millions of dollars in state and local taxes (including
3 withholding, utility, sales and use on non-exempt purchases, real estate, tangible personal
4 property, business license, industrial utility). This significant tax revenue provides some
5 Virginia counties with at least \$13 for every \$1 in county-funded services required, which
6 translates to vital funding for our schools, affordable housing, social services, and other
7 local priorities.³

8 **Q. ARE DATA CENTERS INDIRECT DRIVERS OF TAX REVENUES IN**
9 **VIRGINIA?**

10 **A.** Yes. Economic activity generated by data centers results in additional tax collections from
11 employees, business suppliers, and other entities. In addition, the industry places
12 downward pressure on overall tax rates, improving the business climate and economic
13 attractiveness of the localities in which data centers are located. Given these benefits, data
14 centers are an extremely efficient use of land from a financial standpoint. In 2021, the Data
15 Processing, Hosting and Related Services industries were directly and indirectly
16 responsible for supporting \$174 million in revenue and \$1 billion local tax revenue in
17 Virginia.⁴ This revenue, among other things, helps reduce the burden on educational
18 funding provided by the Commonwealth.

³ *Id.* at 25.

⁴ *Id.* at 5, 22.

1 Q. HOW HAVE DATA CENTERS BEEN BENEFICIAL TO LOUDOUN COUNTY,
2 VIRGINIA?

3 A. While existing data center development represents less than 1.5% of total land area in
4 Loudoun County, the industry will contribute an estimated \$575 million in FY2022
5 General Fund revenues, equating to 31% of the FY2022 budget for the County's General
6 Fund.⁵ In addition, the County indicates that data centers are paying more in real property
7 taxes than would any other alternative type of development.⁶

8 Q. WHAT OTHER SPECIFIC BENEFITS HAVE DATA CENTERS PROVIDED TO
9 LOCALITIES IN NORTHERN VIRGINIA?

10 A. In Prince William County, annual tax revenue from data centers increased an average of
11 32% per year over the past decade. The County anticipates receiving more than \$100
12 million in data center tax revenues this year. The industry provides consistently high
13 property tax revenue while placing few demands on local government services (schools,
14 emergency services, traffic congestion). According to NVTC, the 2020 cost to benefit ratio
15 for data centers in Loudoun County was 13.2, while in Prince William County it was 13.5.⁷

16 Q. HOW DOES THE DATA CENTER INDUSTRY BUILD AND STRENGTHEN THE
17 TECH ECOSYSTEM IN VIRGINIA?

18 A. Generally, data centers help ensure that construction and operations supply chains develop
19 to support the industry. In Northern Virginia, 4-17.2 additional jobs are supported for every

⁵ Loudoun County Board of Supervisors' Transportation and Land Use Committee, *Data Center Financial Considerations* (June 1, 2022), <https://lfportal.loudoun.gov/LFPortalinternet/0/edoc/564776/Item%2002%20Data%20Center%20Financial%20Considerations.pdf>.

⁶ See *id.*

⁷ 2022 *Virginia Data Center Report* at 25.

1 job inside a data center, including construction~~which increases to 11.1 jobs when~~
2 ~~construction is included.~~⁸

3 **Q. HOW HAVE THE CLOUD COMPUTING AND DATA CENTER INDUSTRIES**
4 **CONTRIBUTED TO INCREASED ENERGY EFFICIENCY?**

5 **A.** While data centers are large consumers of power, the industry is constantly seeking ways
6 to reduce energy consumption and maximize the efficient use of energy in order to be
7 competitive in the marketplace, meet customer demands, and improve bottom lines.

8 **Q. HAS THIS ALWAYS BEEN THE CASE?**

9 **A.** No. Previously, computing resources were dispersed across businesses, which was far less
10 efficient and secure. In 2010, nearly 80% of data center computing was done in smaller
11 traditional computer centers, largely owned and operated by non-technology companies.
12 By 2018, approximately 89% of data center computing took place in larger cloud data
13 centers.⁹

14 **Q. HAVE CENTRALIZED COMPUTING RESOURCES RESULTED IN ENERGY**
15 **EFFICIENCY?**

16 **A.** Yes. By centralizing computing resources, data centers have been able to leverage
17 innovations in design, equipment, and technology to maximize energy efficiency. For
18 example, a 2020 U.S. Department of Energy-funded study on data centers globally found
19 that while computing output at data centers jumped sixfold from 2010 to 2018, energy

⁸ Magnum Economics, 2021 Virginia Data Center Multipliers: A Research Note Based on "The Impact of Data Centers on the State and Local Economies of Virginia" at 1 (Aug. 16, 2023), <https://silkstart.s3.amazonaws.com/186c5c64-6cc2-49bd-a67c-811094c8522d.pdf> at 14.

⁹ See Steve Lohr, *Cloud Computing Is Not the Energy Hog That Had Been Feared*, N. Y. TIMES (Feb. 27, 2020), <https://www.nytimes.com/2020/02/27/technology/cloud-computing-energy-usage.html>.

1 consumption only rose 6%.¹⁰ Therefore, data centers by their very nature are a model –
2 even a revelation – of energy efficiency.

3 **Q. DO THE EFFICIENCIES UNLOCKED BY DATA CENTERS GO FAR BEYOND**
4 **DATA CENTERS THEMSELVES?**

5 **A.** Yes. Data centers also help facilitate efficiency gains for homes, businesses, and even
6 utilities. Many clean energy technologies deployed across Virginia – including smart
7 thermostats and smart meters, automated lighting, and household appliances – require the
8 digital infrastructure provided by data centers. Data centers also support technologies and
9 practices deployed by many business sectors as they seek to advance their energy efficiency
10 and competitiveness, including advanced manufacturing, electric vehicle fleets, schools,
11 and government agencies.

12 **Q. WHAT HAS THE DATA CENTER INDUSTRY DONE TO LEAD THE WAY IN**
13 **RENEWABLE ENERGY DEVELOPMENT?**

14 **A.** Leading data center owners and operators have not stopped at energy efficiency. They
15 have also led the charge in Virginia and globally in developing and procuring carbon-free
16 energy by directly and indirectly financing and supporting clean energy development
17 through public policy advocacy. Data centers partner with utilities and work directly with
18 renewable energy developers, suppliers, and other organizations to green the grid and
19 enable access to clean energy for other energy consumers and ratepayers.

20 **Q. HAVE DATA CENTER COMPANIES SET SPECIFIC CLEAN ENERGY GOALS?**

¹⁰ *Id.*

1 A. Yes. Many leading data center companies have established and pursued aggressive clean
2 energy and sustainability goals; some have committed to achieving carbon neutrality and/or
3 utilizing 100% renewable energy within the next 10 years.

4 Q. HAVE VIRGINIA DATA CENTER COMPANIES SET CLEAN ENERGY
5 GOALS?

6 A. Yes. In Virginia, data centers have been a strong catalyst in developing access to renewable
7 energy for themselves and also for other ratepayers for many years.

8 Q. HOW DOES THE DATA CENTER INDUSTRY'S COMMITMENT TO
9 SUSTAINABILITY COMPARE TO OTHER INDUSTRIES?

10 A. When compared to other industries, data center owners and operators stand out for their
11 leadership and commitment to decarbonization through clean energy. According to a
12 January 2023 American Clean Power Report, technology companies have contracted more
13 clean energy sources than any other industry.¹¹ In addition, leading technology companies
14 with data center operations in Virginia represent four of the top five purchasers of clean
15 energy, as determined by the Clean Energy Buyers Association.¹² And at least eight
16 companies with data center facilities in Virginia are included and ranked in the U.S.
17 Environmental Protection Agency's Green Power Partnership National Top 100.¹³

¹¹ *NEW REPORT: Corporations Purchased More U.S. Clean Energy in 2022 Than Ever Before*, AMERICAN CLEAN POWER (Jan. 18, 2023), <https://cleanpower.org/news/new-report-corporations-purchased-more-u-s-clean-energy-in-2022-than-ever-before/>.

¹² *Clean Energy Buyers Association Announces Top 10 U.S. Energy Customers in 2021*, BUSINESS WIRE (Feb. 16, 2022), <https://www.businesswire.com/news/home/20220216005453/en/Clean-Energy-Buyers-Association-Announces-Top-10-U.S.-Energy-Customers-in-2021>.

¹³ *Green Power Partnership National Top 100*, ENVTL. PROT. AGENCY, <https://www.epa.gov/greenpower/green-power-partnership-national-top-100>.

1 **Q. HAS THE DATA CENTER INDUSTRY ENCOURAGED OTHER INDUSTRIES**
2 **TO MAKE COMMITMENTS TO SUSTAINABILITY?**

3 **A.** Yes. Some data centers are using their scale and supplier relationships to ensure other
4 businesses and industries are doing their part to decarbonize, including some data center
5 operators that are engaging their suppliers to set their own science-based targets for
6 reducing emissions by 2025.

7 **Q. WHY IS IT IMPORTANT TO UNDERSTAND THE BENEFITS THAT THE DATA**
8 **CENTER INDUSTRY BRINGS TO THE ENERGY INDUSTRY IN VIRGINIA?**

9 **A.** We ask the Commission not to lose sight of the energy, climate, and economic benefits
10 unlocked by data centers: they are highly efficient facilities driving clean energy
11 development and supporting all facets of our modern economy in Virginia. Furthermore,
12 Dominion's proposed IRP – and any related grid investments – cannot be viewed in a
13 vacuum as solely serving and benefiting data centers., even taking into account Dominion's
14 observation in its 2023 IRP that the “proliferation of high-demand data centers” will
15 contribute to the increased growth rate of electricity demand.¹⁴ The bottom line is that
16 Dominion's investments are required to support and grow the economic drivers of the 21st
17 century, including but not limited to advanced manufacturers, semiconductor chip
18 manufacturers, electronic vehicle manufacturers, battery manufacturers, and controlled
19 environment agriculture. The benefits are statewide and support all Virginians.

20 **Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?**

21 **A.** Yes, it does.

¹⁴ 2023 IRP at 6.

Clean

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

COMMONWEALTH OF VIRGINIA, *ex rel.*)
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22 environment agriculture, among others. Virginia's continuing success in recruiting key
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9 securely. Data centers are also responsible for data backup and recovery, as well as
10 networking. Much of what we do in our daily digitized lives would not be possible were
11 it not for data centers. Our finances, communications, health care, recreation,
12 entertainment, education, transportation, work, and social lives are increasingly online, in
13 the cloud, with information needed to be stored and available on a personalized level in
14 real time. Data centers enable secure and efficient financial transactions involving vast
15 amounts of sensitive data, including customer account information and transaction data.
16 Healthcare centers leverage data centers to streamline how they manage and store data
17 from confidential medical records to prescriptions and anything in-between. Governments
18 use data centers to support their first responders and public safety agencies in conveying
19 data quickly and storing it safely in the cloud. Without data centers, there would likely be
20 no personalized shopping recommendations; on-the-fly driving directions; online
21 assistance in selecting a restaurant, hotel, or airline flight; digital grocery coupons; machine
22 responses to banking and billing inquiries; and so much more that we have come to expect

1 as basic parts of our everyday lives. The need for reliable data centers will continue to
2 increase as society's reliance on digitized information and artificial intelligence increases.

3 **Q. WHAT IS THE ROLE OF RELIABLE ELECTRICITY FOR THESE**
4 **INDUSTRIES?**

5 **A.** Reliable electricity will be essential in supporting the growth of our digitized world. That
6 includes supporting the growth of all industries, governments, and individuals that directly
7 or indirectly rely on data centers to safely and efficiently store and provide data on a 24/7
8 basis.

9 **Q. HAS THE DATA CENTER INDUSTRY DELIVERED SIGNIFICANT**
10 **ECONOMIC BENEFITS TO THE COMMONWEALTH?**

11 **A.** Yes. In 2021, data centers represented \$6.8 billion of investment in Virginia – nearly two-
12 thirds of all capital investment in the Commonwealth.¹

13 **Q. WHAT ARE SOME OF THE WAYS IN WHICH DATA CENTERS DRIVE**
14 **ECONOMIC BENEFITS TO THE COMMONWEALTH?**

15 **A.** In 2021 in Virginia, the data center industry was directly and indirectly responsible for:

- 16 • 45,460 jobs
- 17 • 4.1 additional jobs for every data center job
- 18 • \$3.6 billion associated pay and benefits
- 19 • \$15.3 billion total economic output (direct and indirect)²

¹ Northern Virginia Technology Council, *The Impact of Data Centers on the State and Local Economies of Virginia* at 6 (March 2022), <https://dcmag.fr/wp-content/uploads/2022/04/2022-NVTC-Data-Center-Report-3.24.pdf> [hereinafter *2022 Virginia Data Center Report*].

² *Id.* at 5.

1 **Q. ARE DATA CENTERS DIRECT DRIVERS OF TAX REVENUES IN VIRGINIA?**

2 **A.** Yes. Data centers support millions of dollars in state and local taxes (including
3 withholding, utility, sales and use on non-exempt purchases, real estate, tangible personal
4 property, business license, industrial utility). This significant tax revenue provides some
5 Virginia counties with at least \$13 for every \$1 in county-funded services required, which
6 translates to vital funding for our schools, affordable housing, social services, and other
7 local priorities.³

8 **Q. ARE DATA CENTERS INDIRECT DRIVERS OF TAX REVENUES IN**
9 **VIRGINIA?**

10 **A.** Yes. Economic activity generated by data centers results in additional tax collections from
11 employees, business suppliers, and other entities. In addition, the industry places
12 downward pressure on overall tax rates, improving the business climate and economic
13 attractiveness of the localities in which data centers are located. Given these benefits, data
14 centers are an extremely efficient use of land from a financial standpoint. In 2021, the Data
15 Processing, Hosting and Related Services industries were directly and indirectly
16 responsible for supporting \$174 million in revenue and \$1 billion local tax revenue in
17 Virginia.⁴ This revenue, among other things, helps reduce the burden on educational
18 funding provided by the Commonwealth.

³ *Id.* at 25.

⁴ *Id.* at 5, 22.

1 **Q. HOW HAVE DATA CENTERS BEEN BENEFICIAL TO LOUDOUN COUNTY,**
2 **VIRGINIA?**

3 **A.** While existing data center development represents less than 1.5% of total land area in
4 Loudoun County, the industry will contribute an estimated \$575 million in FY2022
5 General Fund revenues, equating to 31% of the FY2022 budget for the County's General
6 Fund.⁵ In addition, the County indicates that data centers are paying more in real property
7 taxes than would any other alternative type of development.⁶

8 **Q. WHAT OTHER SPECIFIC BENEFITS HAVE DATA CENTERS PROVIDED TO**
9 **LOCALITIES IN NORTHERN VIRGINIA?**

10 **A.** In Prince William County, annual tax revenue from data centers increased an average of
11 32% per year over the past decade. The County anticipates receiving more than \$100
12 million in data center tax revenues this year. The industry provides consistently high
13 property tax revenue while placing few demands on local government services (schools,
14 emergency services, traffic congestion). According to NVTC, the 2020 cost to benefit ratio
15 for data centers in Loudoun County was 13.2, while in Prince William County it was 13.5.⁷

16 **Q. HOW DOES THE DATA CENTER INDUSTRY BUILD AND STRENGTHEN THE**
17 **TECH ECOSYSTEM IN VIRGINIA?**

⁵ Loudoun County Board of Supervisors' Transportation and Land Use Committee, *Data Center Financial Considerations* (June 1, 2022), <https://lportal.loudoun.gov/LFPortalinternet/0/edoc/564776/Item%2002%20Data%20Center%20Financial%20Considerations.pdf>.

⁶ See *id.*

⁷ 2022 Virginia Data Center Report at 25.

1 A. Generally, data centers help ensure that construction and operations supply chains develop
2 to support the industry. In Virginia, 7.2 additional jobs are supported for every job inside
3 a data center, including construction.⁸

4 Q. HOW HAVE THE CLOUD COMPUTING AND DATA CENTER INDUSTRIES
5 CONTRIBUTED TO INCREASED ENERGY EFFICIENCY?

6 A. While data centers are large consumers of power, the industry is constantly seeking ways
7 to reduce energy consumption and maximize the efficient use of energy in order to be
8 competitive in the marketplace, meet customer demands, and improve bottom lines.

9 Q. HAS THIS ALWAYS BEEN THE CASE?

10 A. No. Previously, computing resources were dispersed across businesses, which was far less
11 efficient and secure. In 2010, nearly 80% of data center computing was done in smaller
12 traditional computer centers, largely owned and operated by non-technology companies.
13 By 2018, approximately 89% of data center computing took place in larger cloud data
14 centers.⁹

15 Q. HAVE CENTRALIZED COMPUTING RESOURCES RESULTED IN ENERGY
16 EFFICIENCY?

17 A. Yes. By centralizing computing resources, data centers have been able to leverage
18 innovations in design, equipment, and technology to maximize energy efficiency. For
19 example, a 2020 U.S. Department of Energy-funded study on data centers globally found

⁸ Magnum Economics, *2021 Virginia Data Center Multipliers: A Research Note Based on "The Impact of Data Centers on the State and Local Economies of Virginia"* at 1 (Aug. 16, 2023), <https://silkstart.s3.amazonaws.com/186c5c64-6cc2-49bd-a67c-811094c8522d.pdf>.

⁹ See Steve Lohr, *Cloud Computing Is Not the Energy Hog That Had Been Feared*, N. Y. TIMES (Feb. 27, 2020), <https://www.nytimes.com/2020/02/27/technology/cloud-computing-energy-usage.html>.

1 that while computing output at data centers jumped sixfold from 2010 to 2018, energy
2 consumption only rose 6%.¹⁰ Therefore, data centers by their very nature are a model –
3 even a revelation – of energy efficiency.

4 **Q. DO THE EFFICIENCIES UNLOCKED BY DATA CENTERS GO FAR BEYOND**
5 **DATA CENTERS THEMSELVES?**

6 **A.** Yes. Data centers also help facilitate efficiency gains for homes, businesses, and even
7 utilities. Many clean energy technologies deployed across Virginia – including smart
8 thermostats and smart meters, automated lighting, and household appliances – require the
9 digital infrastructure provided by data centers. Data centers also support technologies and
10 practices deployed by many business sectors as they seek to advance their energy efficiency
11 and competitiveness, including advanced manufacturing, electric vehicle fleets, schools,
12 and government agencies.

13 **Q. WHAT HAS THE DATA CENTER INDUSTRY DONE TO LEAD THE WAY IN**
14 **RENEWABLE ENERGY DEVELOPMENT?**

15 **A.** Leading data center owners and operators have not stopped at energy efficiency. They
16 have also led the charge in Virginia and globally in developing and procuring carbon-free
17 energy by directly and indirectly financing and supporting clean energy development
18 through public policy advocacy. Data centers partner with utilities and work directly with
19 renewable energy developers, suppliers, and other organizations to green the grid and
20 enable access to clean energy for other energy consumers and ratepayers.

21 **Q. HAVE DATA CENTER COMPANIES SET SPECIFIC CLEAN ENERGY GOALS?**

¹⁰ *Id.*

1 A. Yes. Many leading data center companies have established and pursued aggressive clean
2 energy and sustainability goals; some have committed to achieving carbon neutrality and/or
3 utilizing 100% renewable energy within the next 10 years.

4 Q. HAVE VIRGINIA DATA CENTER COMPANIES SET CLEAN ENERGY
5 GOALS?

6 A. Yes. In Virginia, data centers have been a strong catalyst in developing access to renewable
7 energy for themselves and also for other ratepayers for many years.

8 Q. HOW DOES THE DATA CENTER INDUSTRY'S COMMITMENT TO
9 SUSTAINABILITY COMPARE TO OTHER INDUSTRIES?

10 A. When compared to other industries, data center owners and operators stand out for their
11 leadership and commitment to decarbonization through clean energy. According to a
12 January 2023 American Clean Power Report, technology companies have contracted more
13 clean energy sources than any other industry.¹¹ In addition, leading technology companies
14 with data center operations in Virginia represent four of the top five purchasers of clean
15 energy, as determined by the Clean Energy Buyers Association.¹² And at least eight
16 companies with data center facilities in Virginia are included and ranked in the U.S.
17 Environmental Protection Agency's Green Power Partnership National Top 100.¹³

¹¹ *NEW REPORT: Corporations Purchased More U.S. Clean Energy in 2022 Than Ever Before*, AMERICAN CLEAN POWER (Jan. 18, 2023), <https://cleanpower.org/news/new-report-corporations-purchased-more-u-s-clean-energy-in-2022-than-ever-before/>.

¹² *Clean Energy Buyers Association Announces Top 10 U.S. Energy Customers in 2021*, BUSINESS WIRE (Feb. 16, 2022), <https://www.businesswire.com/news/home/20220216005453/en/Clean-Energy-Buyers-Association-Announces-Top-10-U.S.-Energy-Customers-in-2021>.

¹³ *Green Power Partnership National Top 100*, ENVTL. PROT. AGENCY, <https://www.epa.gov/greenpower/green-power-partnership-national-top-100>.

1 **Q. HAS THE DATA CENTER INDUSTRY ENCOURAGED OTHER INDUSTRIES**
2 **TO MAKE COMMITMENTS TO SUSTAINABILITY?**

3 **A.** Yes. Some data centers are using their scale and supplier relationships to ensure other
4 businesses and industries are doing their part to decarbonize, including some data center
5 operators that are engaging their suppliers to set their own science-based targets for
6 reducing emissions by 2025.

7 **Q. WHY IS IT IMPORTANT TO UNDERSTAND THE BENEFITS THAT THE DATA**
8 **CENTER INDUSTRY BRINGS TO THE ENERGY INDUSTRY IN VIRGINIA?**

9 **A.** We ask the Commission not to lose sight of the energy, climate, and economic benefits
10 unlocked by data centers: they are highly efficient facilities driving clean energy
11 development and supporting all facets of our modern economy in Virginia. Furthermore,
12 Dominion's proposed IRP – and any related grid investments – cannot be viewed in a
13 vacuum as solely serving and benefiting data centers., even taking into account Dominion's
14 observation in its 2023 IRP that the "proliferation of high-demand data centers" will
15 contribute to the increased growth rate of electricity demand.¹⁴ The bottom line is that
16 Dominion's investments are required to support and grow the economic drivers of the 21st
17 century, including but not limited to advanced manufacturers, semiconductor chip
18 manufacturers, electronic vehicle manufacturers, battery manufacturers, and controlled
19 environment agriculture. The benefits are statewide and support all Virginians.

20 **Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?**

21 **A.** Yes, it does.

¹⁴ 2023 IRP at 6.